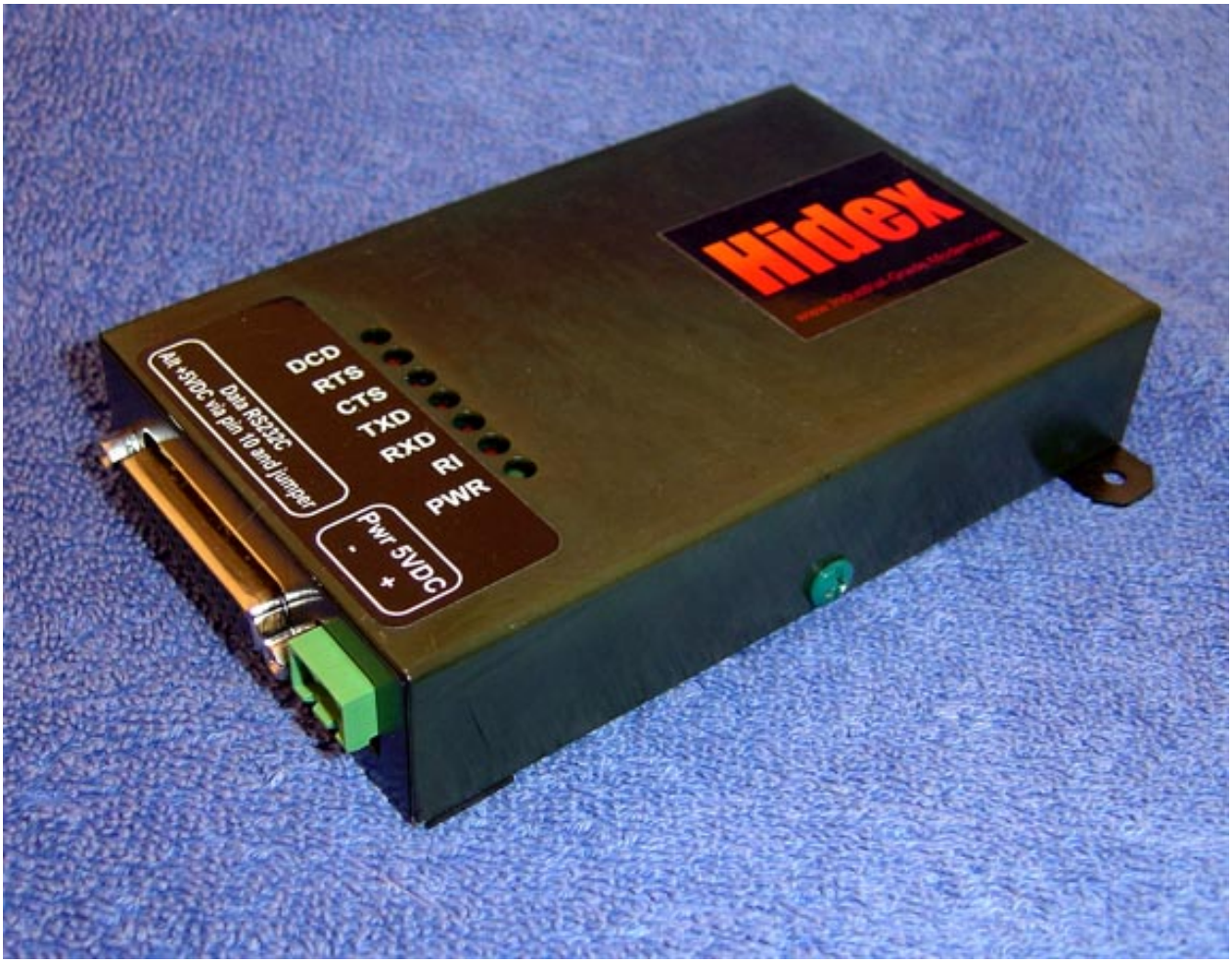


Description

The Hidex V.92 Industrial Grade Modem is the most versatile model for Dial up or leased analog telephone line interconnect. The Hidex HXII56TM offers speeds up to 56K over the analog switched telephone network. They are temperature tested, rugged modems in a metal case designed for Industrial applications. Directly connected to RTU's, traffic controllers, variable message signs or any number of other applications, they communicate at 300 bps to 56 kbps over analog telephone lines. All HX models have High voltage surge protection on the telephone lines. The power required is 5VDC and includes a locking connector to prevent vibration disconnects.

Features

Category	***Description***
Client-to-Server Data Rates	Supports V.92 and V.90 data rates
AGC Dynamic Range	43 dB

Client-to-Client Data Rates	33,600; 31,200; 28,800; 26,400; 24,000; 21,600; 19,200; 16,800; 14,400; 12,000; 9600; 7200; 4800; 2400; 1200; 0-300 bps
Command Buffer	60 characters
DAA Isolation	1500 Vac
Data Compatibility	V.92, V.34 enhanced, V.34, V.32bis, V.32, V.22bis, V.22; Bell 212A and 103/113, V.21 & V.23
Data Compression	ITU-T V.44 (6:1 throughput); V.42bis (4:1 throughput); MNP 5 (2:1 throughput)
Data Format	Serial, binary, asynchronous (available with parallel interface)
Diagnostics	Local analog loop, local digital loop, remote digital loop
Dimensions	5.12 x 3.50 x 1.0 inches
Error Correction	Data Mode: V.42 (LAP-M or MNP 3–4)
Flow Control	XON/XOFF (software), RTS/CTS (hardware)
Frequency Stability	±0.01%
Interface	RS232C via DB25F
Operating Voltage	HXII56TM 5 V DC ± 5% Absolute Maximum Supply Voltage: 5.5 V DC Option A internal converter 9 to 18 VDC to modem power connector. Option B internal converter 18 to 36 VDC to modem power connector. Option C internal converter 36 to 72 VDC to modem power connector.
Operational Temperature Range	–40 to +85° C ambient under closed conditions; humidity range 20–90% (non-condensing)
Power Consumption	Typical: 180 mA , Standby or Sleep Mode: 88 mA, Maximum: 290 mA
Receiver Sensitivity	–43 dBm under worst-case conditions
Serial Speeds	Serial port data rates adjustable to 300, 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600, 115,200, and 230,400 bps
Storage Temperature	–50 to +100° C
Transmit Level	–11 dBm (varies by country setting)
Manufacturing Information	Trade Name: Hidex – Industrial Grade Modems Model Number: HXII56TM & MT5634SMI-92 Registration No: AU7USA-25814-M5-E Ringer Equivalence: 0.3B Modular Jack (USOC): RJ11
Approvals- modem module	**Safety Certifications** UL60950 cUL60950 EN60950 IEC60950 ACA TS001 / AS 3260 CCC **EMC Approvals** FCC Part 15 Canadian EMC EN 55022 EN 55024 GB4943, GB9254

Intelligent Features	Fully AT command compatible Leased-line operation Sleep mode Autodial, redial Pulse or tone dial Dial pauses Auto answer Adaptive line probing Automatic symbol and carrier frequency during start-up, retrain, and rate renegotiations DTMF detection Distinctive ring Voice record and playback Call status display, auto-parity and data rate selections Keyboard-controlled modem options On-screen displays for modem option parameters remote configuration DTR dialing phone number storage flash memory for firmware updates NVRAM storage for user-defined parameters

Compliance to Global Telephone Standards

Hidex II modems have passed the following homologation:
FCC Part 68
FCC Part 15
IC-CS03
ETSI TS 103 021-1,2,3 v.1.1.2 2003-09 (originally CTR21)
ESD
(See Complete HXII56TM AT Commands for setting country codes)

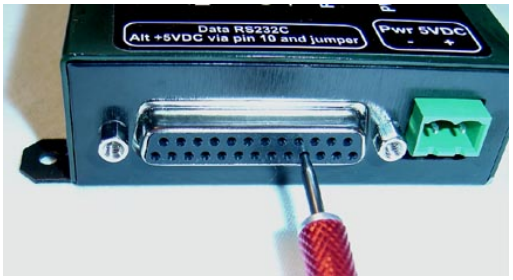
External Power Sources

The native power for model HXII56TM is 5VDC to the power connector or via DB25 connector.
Power **option A** is an internal power converter that changes the power from 5 VDC to **9 to 18 VDC**.
Power **option B** is an internal power converter that changes the power to **18 to 36 VDC**.
Power **option C** is an internal power converter that changes the power to **36 to 72 VDC**.

Power Connections

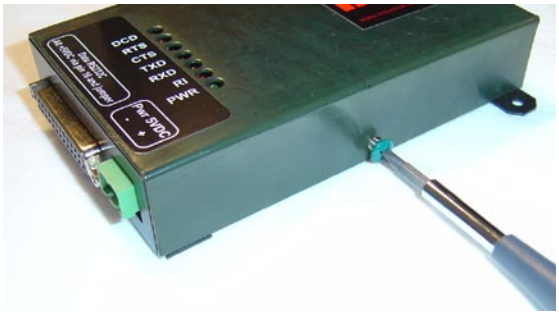
There are two optional methods of supplying power to the modem. Use the locking 2 pin power connector or via the RS232 cable. An internal jumper is factory set to use the 2 pin power connector. (see instructions on changing this jumper for DB25 connector power)

Included with each modem is the mating connector for the input power. Connect the external 5 VDC power source to the supplied connector with attention to the +/- polarity of the voltage source. CAUTION: NOTE THE POLARITY ON THE CONNECTOR LABEL.

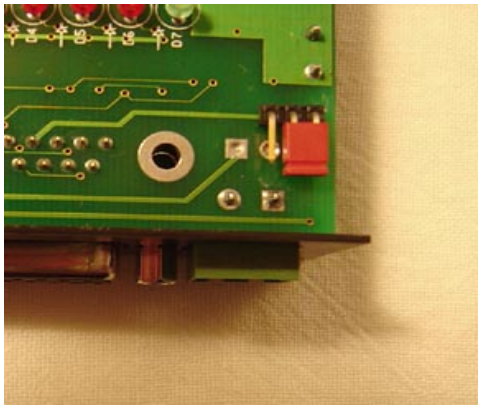


Pin 10 plus 5VDC and pin 7 ground

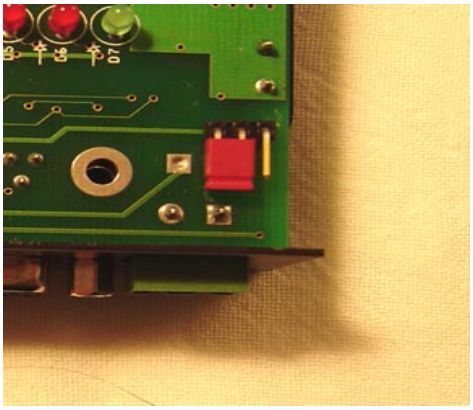
Alternate power can be connected via the DB25 connector pin # 10 for +5VDC and pin # 1 or 7 for ground. To enable this option, remove the power connector and remove the modem cover by removing the 2 screws on the sides of the case.



Remove screws (2) from sides of case and remove cover.



Jumper factory set to power via 2 pin connector



Move jumper to alternate position

Change the jumper showed to the alternate location and replace the cover screws. Connect 5VDC power to pin 10 and ground to pin 7.

Safety Ground Connection

Use the **GREEN** case cover screw to connect a safety ground wire if desired

Data Interface

Data is interfaced via a DB25 female connector.

Pin 1 GRD Signal Ground
Pin 2 TXD Transmit Data
Pin 3 RXD Receive Data
Pin 4 RTS Request to Send
Pin 5 CTS Clear to Send
Pin 6 DSR Data Set Ready
Pin 7 SG Signal Ground
Pin 8 DCD Carrier Detect
Pin 10 (Alternate power input +5VDC with jumper on PWB)
Pin 20 DTR Data Terminal Ready
Pin 22 RI Ring Indicate

LED Indicators

DCD Data Carrier Detect
RTS Request To Send
CTS Clear To Send
TXD Transmit Data
RXD Receive Data
RI Ring Indicate
PWR Power indicator (green)

Hardware Setup:

Setup Procedure:

1. Use the RS-232 cable to connect the DB25 connector (J1) on the modem to a PC serial port (Typically COM1).
2. Connect the RJ11 connector to a phone line.
3. Connect external power +5VDC to the power jack via 2 pin green connector or via alternate DB25 pins 10 & 7.

Hyper Terminal setup:

The modem can be tested as a standard serial data modem by connecting it to a personal computer or other data terminal equipment (DTE). Any standard terminal program such as HyperTerminal or ProComm running on a PC will communicate with the modem.

AT Commands

AT refers to the command prefix (attention sequence) that precedes each command to the modem. With the exception of A/ all commands must be preceded by AT and end with a carriage return <return>. Some useful AT commands commonly used are:

The A/ command instructs the modem to repeat the last command line. A command line termination character is not required for the execution of this command (that is, the command is executed as soon as the slash is typed).

AT Command Summary

Organization of AT Commands on the following pages: 1st, by the initial command character (&, +, %) 2nd, alphabetized by the second command character (Except for listing of **AT**).

Command Description
AT Attention Code
A Answer
A/ Repeat Last Command
B*n* Communication Standard Setting
Ds Dial
DS=*y* Dial Stored Telephone Number
E*n* Echo Command Mode Characters
F*n* Echo Online Data Characters
H*n* Hook Control
I*n* Information Request
M*n* Monitor Speaker Mode
N*n* Modulation Handshake
O*n* Return Online to Data Mode
P Pulse Dialing
Q*n* Result Codes Enable/Disable
S*r=n* Set Register Value
S*r?* Read Register Value
T Tone Dialing
V*n* Result Code Format
W*n* Result Code Options
X*n* Result Code Selection
Z*n* Modem Reset
&C*n* Data Carrier Detect (DCD) Control
&D*n* Data Terminal Ready (DTR) Control
&E*n* XON/XOFF Pass-Through

&F*n* Load Factory Settings
&G*n* V.22bis Guard Tone Control
&K*n* Flow Control Selection
&L*n* Leased Line Operation
&P*n* Pulse Dial Make-to-Break Ratio Selection
&Q*n* Asynchronous Communications Mode
&S*n* Data Set Ready (DSR) Control
&T*n* Loopback Test (V.54 Test) Commands
&V Display Current Settings
&W*n* Store Current Configuration
&Zy=*x* Store Dialing Command
\A*n* Select Maximum MNP Block Size
\B*n* Transmit Break
\K*n* Break Control
\N*n* Error Correction Mode Selection
\Q*n* Flow Control Selection
\T*n* Inactivity Timer
\V*n* Protocol Result Code
-C*n* Data Calling Tone

Command Description
%A Adaptive Answer Result Code Enable
%B View Numbers in Blacklist
%C*n* Data Compression Control
%DC*n* AT Command Control
%E*n* Fallback and Fall Forward Control
%H*n* Direct Connect Enable
%R*n* Cisco Configuration
%S*n* Command Speed Response
$EB*n* Asynchronous Word Length
$D*n* DTR Dialing
$MB*n* Online BPS Speed
$SB*n* Serial Port Baud Rate
#CBA*n* Callback Attempts
#CBD*n* Callback Delay
 # CBF? Callback Failed Attempts Display
 # CBFR Callback Failed Attempts Reset
 # CBI*n* Local Callback Inactivity Timer
 # CBN*y*=*n* Store Callback Password
 # CBP*n* Callback Parity
 # CBR*y* Callback Security Reset
 # CBS*n* Callback Enable/Disable
#P*n* Set 11-bit Parity
#S*x* Enter Setup Password
#S=*x* Store Setup Password
+VDR=*x, y* Distinctive Ring Report
+++AT<CR> Escape Sequence
%%%ATMTSMODEM<CR> Remote Configuration Escape Sequence
V.92 Commands

Complete AT commands and programming

The complete AT commands with details are on the CD included with your modem.

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